

2003 GEORGIA BASIN/PUGET SOUND

RESEARCH CONFERENCE



APPLYING
SCIENCE AND
INFORMATION TO
SUSTAINABILITY
IN A SHARED
TRANSBOUNDARY
ECOSYSTEM

CONFERENCE PROGRAM

HOSTED BY:



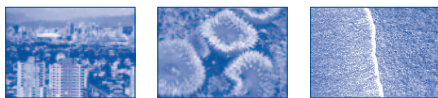
WORKING TOGETHER
FOR THE
GEORGIA BASIN

AU TRAVAIL
POUR LE
BASSIN DE GEORGIA


PUGET SOUND
ACTION TEAM

MARCH 31 –
APRIL 3, 2003

WESTIN BAYSHORE
VANCOUVER,
BRITISH COLUMBIA



2003 GEORGIA BASIN/PUGET SOUND
RESEARCH CONFERENCE
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WELCOME

Welcome to the 2003 Georgia Basin/Puget Sound Research Conference. This booklet is your guide to four days of what we hope will be an informative and engaging program. In this booklet you will find information on the oral presentations included in each concurrent session, a description of the poster presentations and a quick-reference grid of the conference agenda.

Please stop by the Conference Information Center in the Bayshore Grand Ballroom Lobby if you have questions.

Enjoy the conference!

KEYNOTE PRESENTERS



ELIZABETH DOWDESWELL

**Science, Technology and Globalization:
New Directions for Science in a
Changing World?**

Monday AM General Session

Ms. Dowdeswell served as Executive

Director of the United Nations Environment Programme and Under Secretary General of the United Nations until 1998. During the past year, she has contributed to an initiative of the Center for Science and International Affairs at Harvard University, which focuses on how to mobilize the world's scientific and technical knowledge to solve global development challenges.



BILLY FRANK, JR.

Saving Our Legacies

Monday AM General Session

Billy Frank, Jr., is a Nisqually tribal leader who was instrumental in securing a peaceful settlement to longstanding fishing conflicts in

Washington State and throughout the Northwest. For the past quarter century, he has served as chairman of the Northwest Indian Fisheries Commission.



DR. CARL SAFINA

History and Destiny of World Fisheries

Tuesday AM General Session

Carl Safina has been close to the sea all of his life, having grown up on Long Island.

Since 1990 he has worked to put ocean fish conservation issues into the wildlife conservation mainstream. He received a PhD in Ecology from Rutgers University and is now president of Blue Ocean Institute, Inc., which he founded.



STEPHEN HUME

The Stewardship of Eden

Tuesday Lunch

Stephen Hume, a visiting lecturer in journalism at the University of Victoria, is senior writer and columnist at *The Vancouver Sun*.

In 1989, he joined *The Vancouver Sun* as columnist-at-large, where his in-depth coverage of social issues serves to educate a broad public.

GENERAL INFORMATION

CONFERENCE CHECK-IN & INFORMATION CENTER

Location: Bayshore Grand Ballroom Lobby

Hours: Monday: 7:00 am - 5:00 pm

Tuesday: 7:30 am - 5:00 pm

Wednesday: 7:30 am - 3:00 pm

Thursday: 7:30 am - 3:30 pm

NAME BADGES

Your name badge is admission to all conference activities and meals. Please wear it at all times. At the end of your stay, please recycle your name badge at the Conference Check-In Center, for use at our next conference.

Conference staff will be wearing blue ribbons and will be available to answer questions you may have throughout the conference.

MESSAGES

Messages may be left for you by instructing others to call the Westin Bayshore at (604) 682-3377 and ask for the Georgia Basin/Puget Sound Research Conference. Messages will be posted near the Conference Check-In Center.

CELLULAR PHONES/PAGERS

Please turn the sound off on your cellular phones, and either turn pagers off or to vibrate mode during sessions as a courtesy to the speakers and other participants.

SPEAKER PREP ROOM

The Fraser Room will be available for speaker preparation. For speakers using PowerPoint who have not submitted their presentation ahead of time, please bring it to this room on a Zip disk or CD between the hours of 7:00 am - Noon on March 31 or between 7:00 - 8:00 am on April 1-3. Our audiovisual technicians will be available to load your presentation onto the computers that will be supplied for your use.

DEMONSTRATIONS

Visit the Coquitlam Room, located on the second level, to take part in the demonstration of tools and models aimed at better understanding our shared ecosystem and improving linkages between science and decision-making.

Demonstrations will include the Sustainable Development Research Institute's QUEST model, a water balance model that acts as a decision support tool for stormwater management and many others.

Consult the demonstration schedule in your registration packet or visit the Georgia Basin Ecosystem Initiative multi-media booth in the main ballroom for more detailed information and times.

NEWS MEDIA ROOM

The Arbutus Room will be available for news media-related needs throughout the conference.

CONCURRENT SESSIONS

Presentation times for each session are listed in the program detail. Program is subject to change.

CONFERENCE EVALUATIONS

Please complete the Conference Evaluation Form in your packet and return it to the Conference Check-In Center. You may also mail or fax your comments to the address or fax number identified on the form. Your opinion is important in planning future conferences.

GENERAL INFORMATION

CONFERENCE PROCEEDINGS

Conference organizers will publish full proceedings. A CD-ROM containing the proceedings of the 2003 Georgia Basin/Puget Sound Research Conference will be sent to all conference attendees before the end of the year. Additional copies will be available for purchase from the Puget Sound Action Team for a charge of US\$15. Proceedings will also be available from the Puget Sound Action Team's website, www.wa.gov/puget_sound.

Until the proceedings are available, please refer to the abstract book included in your conference packet for abstracts of conference presentations and biographical information on presenters.

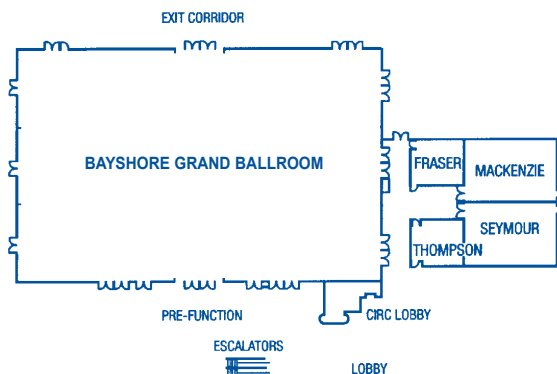
HOTEL CHECK-OUT

Hotel check-out is at noon so please plan your time on the last day accordingly.

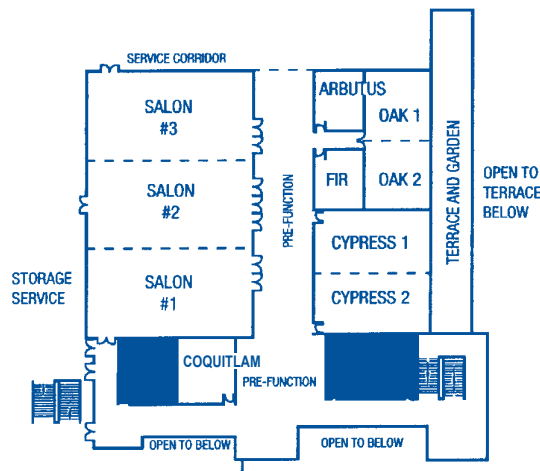
CONFERENCE LOCATION

All program activities are located at the Westin Bayshore. Exact room locations are identified in the daily program and program-at-a-glance pages of this booklet.

LEVEL ONE CONFERENCE FACILITIES



LEVEL TWO CONFERENCE FACILITIES



SPECIAL NEEDS

If you have special accommodation needs or need this document in an alternative format, please contact the Conference Information Center or the Puget Sound Action Team's ADA representative at (360) 407-7300 or TDD number (800) 833-6388.

7:00am	Conference Check-In & Coffee Service			Bayshore Grand Ballroom Lobby	
10:00am-12:00pm	Opening General Session:			Bayshore Grand Ballroom	
First Nation Welcome Chief Leah George-Wilson, Tsleil-Waututh Nation	Welcome: David Fraser, Conference Co-Chair; Environment Canada Peter Dowty, Conference Co-Chair; Puget Sound Action Team	Keynotes: Elizabeth Dowdeswell, Former Executive Director, United Nations Environment Programme	Billy Frank, Jr., Chairman, Northwest Indian Fisheries Commission		
12:00-1:15pm	Opening Lunch		Bayshore Grand Ballroom		
1:30-3:00pm	CONCURRENT SESSIONS 1				
Session 1A People & Processes— Collaborative Management (I) (Salon 1)	Session 1B Climate Change (I) (Salon 2)	Session 1C Treatment, Disposal & Impacts Associated with Contaminated Waters (Oak)	Session 1D Environmental Education (Cypress)	Session 1E Contaminant Burdens in Fish (Seymour)	Session 1F Nearshore Habitat Mapping (Salon 3)
3:00-3:15pm	Beverage Break		Level 2 Prefunction Area		
3:15-4:45pm	CONCURRENT SESSIONS 2				
Session 2A Cultural Resource Mapping (Salon 1)	Session 2B Climate Change (II) (Salon 2)	Session 2C Planning in Urbanizing Habitats (Oak)	Session 2D Regional Conservation Planning (Cypress)	Session 2E Marine Birds: Contaminants, Habitats & Conservation (Seymour)	Session 2F Information & Decision Support Tools for the Marine Environment (Salon 3)
5:00-6:30pm	Opening Reception & Poster Viewing		Bayshore Grand Ballroom		

TUESDAY- APRIL 1, 2003

7:30-8:30am	Conference Check-In, Continental Breakfast & Poster Viewing			Bayshore Grand Ballroom & Lobby	
8:30-10:00am	General Session			Bayshore Grand Ballroom	
Opening: Brad Ack, Chair, Puget Sound Action Team			Keynote: Dr. Carl Safina, Blue Ocean Institute, Inc.		
10:00-10:30am	Beverage Break			Level 2 Prefunction Area	
10:30am-12:00pm	CONCURRENT SESSIONS 3				
Session 3A Regional Ecosystem-Sustainability Indicators (Salon 1)	Session 3B Climate Change (III) (Seymour)	Session 3C Stakeholder Involvement in Stewardship & Planning (Salon 2)	Panel 3D Development Patterns & Eco-system Functions—What Do We Know? (Salon 3)	Session 3E Contaminant Effects on Fish (Oak)	Session 3F Nearshore Habitat Inventories (Cypress)
12:10-1:20pm	Lunch			Bayshore Grand Ballroom	
Keynote: Stephen Hume, Author, Lecturer & Vancouver Sun Columnist					
1:30-3:00pm	CONCURRENT SESSIONS 4				
Panel 4A Connecting Science, Policy & Decisions in Indicator Development & Reporting (Salon 1)	Session 4B Transboundary Air Quality (I) (Seymour)	Session 4C Demersal & Pelagic Fish—Status & Distribution (Salon 2)	Session 4D Ecosystem-based Policy & Planning (Salon 3)	Session 4E PCBs in Georgia Basin/Puget Sound Ecosystems (Oak)	Session 4F Harmful Algal Blooms (Cypress)
3:00-3:30pm	Beverage Break			Level 2 Prefunction Area	
3:30-5:00pm	CONCURRENT SESSIONS 5				
Workshop 5A Developing Common Indicators for a Transboundary Indicator Report (Salon 1)	Session 5B Transboundary Air Quality (II) (Seymour)	Session 5C Salmon Habitat & Population Studies (Salon 2)	Session 5D Information & Decision Support Tools for Landscape Analysis (Salon 3)	Workshop 5E Developing a Research Proposal Addressing PCBs in Georgia Basin/ Puget Sound (Oak)	Workshop 5F Canada's National Programme of Action (NPA): Managing Shared Waters (Cypress)
5:00-6:00pm	Poster Viewing			Bayshore Grand Ballroom	

WEDNESDAY - APRIL 2, 2003

7:30-8:30am	Conference Check-In, Continental Breakfast & Poster Viewing		Bayshore Grand Ballroom & Lobby		
8:30-9:30am	General Session		Bayshore Grand Ballroom		
Presenter: The Honorable David Anderson, Minister of the Environment Canada					
9:30-10:30am	Beverage Break & Poster Viewing		Bayshore Grand Ballroom & Lobby		
10:30am-12:00pm	CONCURRENT SESSIONS 6				
Session 6A Habitat Restoration Projects (Salon1)	Panel 6B Science Decisionmaking Interface (Salon 2)	Session 6C Physical & Biological Oceanography (I) (Salon 3)	Panel 6D Information & Decision Support Tools for Landscape Planning (Seymour)	Session 6E Marine Sediment Contaminants (Cypress)	Session 6F British Columbia/ Washington ECC Meeting begins at 9:30am (Oak)
12:00-1:15pm	Lunch		Bayshore Grand Ballroom		
Keynote: The Honorable Joyce Murray, British Columbia Ministry of Water, Land and Air Protection					
1:30-3:00pm	CONCURRENT SESSIONS 7				
Session 7A Stewardship-Community Approaches (I) (Salon 1)	Session 7B Transboundary Air Quality (III) (Salon 2)	Session 7C Physical & Biological Oceanography (II) (Salon 3)	Panel 7D Modeling Alternative Futures for the Chico Watershed (Seymour)	Session 7E On the Road to Orca Recovery... (Cypress)	Session 7F British Columbia/ Washington ECC Meeting (II) until 5:00pm (Oak)
3:00pm	Conclusion of Daily Concurrent Sessions				
3:30-5:00pm	Informal Workshops				
Harmful Algal Blooms (Cypress)			Advancing Landscape Assessment and Planning: Summary and Roundtable Discussion (Seymour)		

THURSDAY - APRIL 3, 2003

7:30-8:30am	Conference Check-In, Continental Breakfast & Poster Viewing		Bayshore Grand Ballroom & Lobby		
8:30am-10:00am	CONCURRENT SESSIONS 8				
Session 8A Marine Conservation (Salon 1)	Session 8B Low Impact Development Approaches & Watershed Hydrology (Cypress)	Session 8C Invasive Species (Seymour)	Session 8D Stewardship-Community Approaches (II) (Oak)	Session 8E Exposure & Effects of Toxic Chemicals on Wildlife/Biota in GB/PS (Salon 2)	Session 8F Habitat Restoration & Conservation (Salon 3)
10:00-10:30am	Beverage Break		Level 2 Prefunction Area		
10:30-12:00pm	CONCURRENT SESSIONS 9				
Session 9A Designing Marine Reserves (Salon 1)	Session 9B People & Processes—Collaborative Management (II) (Cypress)	Panel 9C Fish Habitat Stewardship in British Columbia (Seymour)	Panel 9D Assisted by Science, Empowered by Public Process... (Oak)	Session 9E Ecosystem Assessment & Management (Salon 2)	Session 9F Nearshore & Subtidal Biota (Salon 3)
12:15-1:45pm	Lunch		Bayshore Grand Ballroom		
2:00-3:30pm	CONCURRENT SESSIONS 10				
Session 10A Evaluation & Assessment of Marine Reserves (Salon 1)	Session 10B People & Processes—Collaborative Management (III) (Cypress)	Workshop 10C Development of a Canadian Biodiversity Index (Seymour)	Session 10D Pacific Estuarine Research Society Presentations (Oak)	Workshop 10E Understanding Trends in Marine Bird Abundance (Salon 2)	Session 10F Human Impact on the Nearshore Environment (Salon 3)
3:30-4:30pm	Closing General Session "Challenges & Future Directions"		Bayshore Grand Ballroom		
Presenters:					
Erik Karlsen, Planning Consultant & Former Management Committee Member of the Georgia Basin Ecosystem Initiative			Joseph K. Gaydos, Marine Ecosystem Health Program, University of California, Davis		
Student Awards Closing					

MONDAY, MARCH 31, 2003

7:00am	Conference Check-In & Coffee Service <i>Bayshore Grand Ballroom Lobby</i>
10:00am-12:00pm	Opening General Session <i>Bayshore Grand Ballroom</i>
First Nation Welcome Chief Leah George-Wilson, Tsleil-Waututh Nation Welcome and Announcements—Conference Co-Chairs David Fraser, Environment Canada Pete Dowty, Puget Sound Action Team Keynotes: Elizabeth Dowdeswell, Former Executive Director, United Nations Environment Programme, "Science, Technology and Globalization: New Directions for Science in a Changing World" Billy Frank, Jr., Chairman, Northwest Indian Fisheries Commission, "Saving Our Legacy"	
12:00-1:15pm	Opening Lunch <i>Bayshore Grand Ballroom</i>
1:30-3:00pm	CONCURRENT SESSIONS 1

Session 1A: People and Processes—Collaborative Management (I) Room: Salon 1

1:30pm The Importance of Human Intervention in the Evolution of Puget Sound Ecosystems
Russel L. Barsh

1:45pm Collaborative Governance for River Basin Management
Jack Blaney

2:00pm Resolving Environmental Disputes Through Collaborative Planning: A Case Study of Land Use Planning in British Columbia
Tanis M. Frame, T. I. Gunton and J.C. Day

2:15pm Byrne Creek Watershed Education and Business Inspection Program
Yota Hatziantoniou

2:30pm The Canada-US Gulf of Maine Program: Bureaucrats Without Borders
Larry Hildebrand

2:45pm An Economic Approach to Environmental Sustainability
Linda Lyshall

Session 1B: Climate Change (I) Room: Salon 2

1:30pm Postglacial Climate and Environmental Change in Southwest British Columbia, Canada
Marlow G. Pellatt and Ian R. Walker

1:45pm Are Peak Snowpacks in the Skagit Basin Decreasing Over Time?
Scott Pattee and Jon Lea*

2:00pm Long-term Trends in Snowpack in the Northwest and Their Climatic Causes
Philip W. Mote, Alan F. Hamlet and Dennis P. Lettenmaier

2:15pm Long-term Changes in Rainfall Intensities in the Greater Vancouver Regional District and its Implications for Stormwater Management
Matthias Jakob, Ian McKendry, Rick Lee, Ed von Euw and Robert Hicks

2:30pm Interdecadal Changes in the Hydrometeorological Regime of the Pacific Northwest and in Regional-Hemispheric Climate Regimes, and Their Linkages
J.J. Vaccaro

2:45pm Changes in the Strait of Juan de Fuca and Puget Sound During the 2000 Drought
Jan A. Newton

*Presenting Author

Session 1C: Treatment, Disposal and Impacts Associated with Contaminated Waters Room: Oak

1:30pm Subsurface Flow Wetland Treatment of Dairy Farm Stormwater
Ian D. Bruce

1:45pm GBEI Wastewater Research that Led to the British Columbia Organic Matter Recycling Regulation
Jack Bryden

2:00pm Review and Update of the "Indicator and Trigger" Approach to Managing Discharges into Marine Receiving Environments
Brenda J. Burd and Paul van Poppelen

2:15pm Effect of Taxonomic Resolution on Detection of Benthic Impacts of Salmon Farming in British Columbia
James E. Dalby, Jr., J. Bernie Taekema, Eric R. McGreer and Lloyd J. Erickson

2:30pm A Quantitative Assessment of Agricultural Intensification and Associated Waste Management Challenges in the Lower Fraser Valley
H. Schreier, R. Bestbier, and G. Derksen

2:45pm Biological Effects from Nonpoint Source Pollution in an Agricultural and Urban Stream Located in the Lower Fraser River Valley
M.Sekela, S. Sylvestre, M. Fluegel, G. Moyle and T. Tuominen

Session 1D: Environmental Education Room: Cypress

1:30pm Empowering Communities Affected by Sediment Contamination with Collaborative, Science-based Risk Communication Tools
Christina H. Drew, Nancy L. Judd*, William C. Griffith, Elaine M. Faustman and Timothy L. Nyerges

1:45pm Puget Sound/Georgia Basin: Protecting and Managing an International Ecosystem: A Tri-University Dialogue
Nadine Fabbi, Don Alper, Ann Lesperance and James Tansey

2:00pm Involving Undergraduates in Oceanographic Research: A Comprehensive Survey of Puget Sound
James E. Gaweel and Cheryl L. Greengrove

2:15pm Reed Point Marina's Education Centre
Rod MacVicar

2:30pm Marine Environmental Education in the San Juan Islands, Washington
Chih-Fan Tsao

*Presenting Author

Session 1E: Containment Burdens in Fish
Room: Seymour

- 1:30pm Project Design and Implementation: Bioaccumulative Toxics in Native American Shellfish**
Jamie Donatuto
- 1:45pm Persistent Organohalogen Pollutants in Freshwater Fish and Alpine Snowpack in Southwestern British Columbia**
Patrick Shaw and Colin Gray
- 2:00pm PAH Exposure in Marine Fishes of Puget Sound and the Georgia Basin**
Sandra M. O'Neill, James West and Gina Ylitalo
- 2:15pm Contamination with Polycyclic Aromatic Hydrocarbons (PAHs) of Spawned and Ovarian Eggs of Pacific Herring (*Clupea pallasii*) in Puget Sound, WA**
James E. West, Sandra M. O'Neill and Daniel C. Doty
- 2:30pm Challenges to Establishing Background for Human and Ecological Risk Assessment in Puget Sound and Beyond**
Nancy L. Judd, James R. Karr, William C. Griffith and Elaine M. Faustman

Session 1F: Nearshore Habitat Mapping
Room: Salon 3

- 1:30pm Surveying Nearshore Habitat Using ShoreZone and the Rapid Shoreline Inventory**
Philip Bloch, John Harper and Helen Berry
- 1:45pm Using Shorezone Inventory Data to Identify Potential Forage Fish Spawning Habitat**
Betty Bookheim, Helen Berry, Blain Reeves* and John Harper
- 2:00pm Use of the Seabed Imaging and Mapping System for Change Detection Monitoring**
John R. Harper, Brian D. Bornhold, Brian Emmett, Pamela Thuringer, Brenda Burd and Chris Picard
- 2:15pm Nearshore Habitat Mapping of the Central and Western Strait of Juan de Fuca: Preferential Use of Nearshore Kelp Habitats by Juvenile Salmon and Forage Fish**
J. Anne Shaffer
- 2:30pm Mapping Nearshore Subtidal Biological and Physical features in Victoria Harbour Using Towed Underwater Video Imagery**
Pam Thuringer, John Harper and Brian Emmett
- 2:45pm Nearshore Habitat Mapping in Hood Canal Using Underwater Video and Hyperspectral Imaging**
Dana Woodruff, Amy Borde, Ralph Garono, Charles Simenstad and Jim Norris

*Presenting Author

3:00-3:15pm	Beverage Break Level 2 Prefunction Area
3:15-4:45pm	CONCURRENT SESSIONS 2

Session 2A: Cultural Resource Mapping
Room: Salon 1

- 3:15pm The Sto:lo Coast Salish Historical Atlas: Resource Information as the Foundation for Decision-making**
Sonny McHalsie
- 4:00pm Collaboration as a Starting Point—Ashkui a Cultural Landscape Unit**
Dave Wilson, Trudy Sable, Jack Selma and Geoff Howell

Session 2B: Climate Change (II)
Room: Salon 2

- 3:15pm Climate Change—Will Our Weather Become More Extreme?**
Francis W. Zwiers
- 3:30pm An End-to-End Assessment of Climate Change Impacts on Water Resources in the Western North America**
L. Ruby Leung and William T. Pennell*
- 3:45pm Hydrologic and Climatic Impacts of a Changed Climate on Georgia Basin, British Columbia**
Christopher J. Reynolds
- 4:00pm Modelling Streamflows in Present and Future Climates—Floods and Droughts in Georgia Basin**
Paul H. Whitfield, Alex J. Cannon and Jon Y. Wang
- 4:15pm Climate Change, Infrastructure and Stream Health in an Urban Catchment**
C. Denault, R.G. Millar and B.J. Lence*
- 4:30pm The Vulnerability of Lower Englishman River Floodplain to Modeled Climate Change**
Scott Weston, Jim McTaggart-Cowan and Richard Guthrie

* Presenting Author

Session 2C: Planning in Urbanizing Habitats
Room: Oak

- 3:15pm Buffers and Setbacks in Marine Environments: A Review of Three US/Canadian Coastal Areas and Their Approach to Coastal Management**
Hilary Culverwell and Jim Brennan
- 3:30pm Planning Property Acquisitions and Protection for In-Stream Habitat Protection: A Parcel Based Ranking of Opportunities in South Prairie Creek**
Chris Davis
- 3:45pm A New Approach to Quantifying the Effectiveness of Riparian Buffers in the Rural-Urban Fringe**
Lea Elliott
- 4:00pm Green Links and Urban Biodiversity—an Experiment in Connectivity**
Valentin Schaefer
- 4:15pm Trout, Transit and Town Centres: GIS and Web Applications for Integrating Fish into Complete Community Planning**
Robyn J. Wark

Session 2D: Regional Conservation Planning
Room: Cypress

- 3:15pm Environmental Implications of Transboundary Protected Areas and Matrix Lands**
James Allaway and Michael Medler
- 3:30pm The Role of Local Ecological Knowledge in Effecting Political Decisions: Lessons from McFadden Creek, Salt Spring Island**
Katherine Dunster
- 3:45pm Nearshore Marine Ecoregional Planning**
Zach Ferdaña, Curtis D. Tanner, Paul Dye and Michael W. Beck

4:00pm The Salish Sea Community Mapping Project
Sheila Harrington, Briony Penn, Judi Stevenson and
Kathy Dunster

**4:15pm An Analytical Approach for the Evaluation of
Critical Habitat Issues for Wide-ranging Nearshore Marine
Species**
Glen Jamieson, Brad Mason and Ed Gregr

**Session 2E: Marine Birds: Contaminants, Habitats and
Conservation**

Room: Seymour

**3:15pm Assessing Southern Strait of Georgia Marine Bird
Population Changes Since 1980—What We Know and
What We Need to Know**
John L. Bower

**3:30pm Wings Across the Border: Lessons from Heron
Conservation in the Georgia Basin and Puget Sound**
Rob Butler

**3:45pm Pairs to Plenty: COASST's Monitoring and
Partnering Patterns**
Todd Hass and Julia K. Parrish

**4:00pm Conserving and Monitoring BC's Coastal
Landbirds**
Shawna Pelech and Wendy Easton

**4:15pm Modeling Waterfowl Use of BC Estuaries within
the Georgia Basin to Assist Conservation Planning and
Population Assessment**
John L. Ryder

**4:30pm What Can Physiology Tell Us About Stopover Site
Habitat Quality for Migrating Western Sandpipers?**
Dana A Seaman, Tony D. Williams and Robert W. Elner

**Session 2F: Information and Decision Support Tools for the
Marine Environment**

Room: Salon 3

3:15pm Automated Monitoring Protocol
Boyd Brown and Nancy Liesch

**3:30pm Using Internet-based Mapping to Improve the
Accessibility of Intertidal and Backshore Inventory and
Ecological Evaluation Information for Victoria and
Esquimalt Harbours**
Brian Emmett, David Harper, Steven Myhill-Jones, Mary
Morris and Pam Thuringer

**3:45pm Enhancing the Planning Process through Science
and Adaptive Management**
Darryl Low Choy

**4:00pm Expert Systems Applied to Marine Oil Spill
Response Operations**
Gerald Graham

5:00-6:30pm Opening Reception & Poster Viewing
Bayshore Grand Ballroom

TUESDAY, APRIL 1, 2003

**7:30-8:30am Conference Check-In, Continental
Breakfast & Poster Viewing**
Bayshore Grand Ballroom & Lobby

8:30-10:00am General Session
Bayshore Grand Ballroom

Opening:

Brad Ack, Chair, Puget Sound Action Team

Keynote:

Dr. Carl Safina, Blue Ocean Institute, Inc., "History and
Destiny of World Fisheries"

10:00-10:30am Beverage Break
Level 2 Prefunction Area

10:30am-12:00pm CONCURRENT SESSIONS 3

Session 3A: Regional Ecosystem-sustainability Indicators

Room: Salon 1

**10:30am Applying Science to Community Interests: Promoting
Change Through User-friendly Environmental Indicators**
Michelle Carr and Shane Ford

10:45am Building Community Sustainability Indicator Reports
Brent Mueller

**11:00am Sustainability Indicators for the Fraser Basin—A
Tool for Change**
Steve Litke

**11:15am Issues in Ecosystem-based Measurement for the
Georgia Basin-Puget Sound Region**
Geoffrey Thornburn and Heidi Siegelbaum

Session 3B: Climate Change (III)

Room: Seymour

**10:30am Influence of Climate Change on the Productivity of
Douglas Fir in the Georgia Basin**
Dave Spittlehouse

**10:45am Climate Impacts on Life History Events of Southern
British Columbia Sockeye Salmon (*Oncorhynchus nerka*)
Populations and Options for Adaptive Management in the Face
of Future Climate Change**
Kim D. Hyatt

**11:00am Simulating Coastal Responses to Climate Change:
Innovative Means of Stakeholder Involvement**
Larissa A. Naylor, Tim O'Riordan and Andrew Watkinson

**11:15am Explaining Climate Change in Southwestern BC:
The Temperature Rising Poster Story**
Bob Turner, John Clague, Bill Taylor, Eric Taylor, Nancy Grenier
and Marnie Olson

**11:30am SUMMARY—A discussion of the climate change
issues for Georgia Basin from the papers in the session.**
Stewart Cohen and Paul Whitfield

Session 3C: Stakeholder Involvement in Stewardship and Planning

Room: Salon 2

**10:30am Evolving Indigenous Approaches to Coastal
Watershed Stewardship: Research and Planning Processes
Initiated by the Tsleil-Waututh First Nation in Indian Arm and
the Indian River Valley**
Douglas Aberley

**10:45am A Public Process for Updating First Nation
Disposal Practices**
Brenda Maguire, Ananthan Suppiah and Robyn Weisner

**11:00am An International Non-governmental Organization in
the Salish Sea**
Ben Starkhouse

11:15am Coastal Planning in the Strait of Georgia: Case Studies on Baynes Sound and Malaspina Inlet Complex
Joe Truscott

11:30am Conducting Research with Junior and High School Students Using a Remotely-Operated Vehicle—A Collaborative Project Between Private and Public Agencies
Judy D'Amore, David Duggins and Robert E. Pacunski*

* Presenting Author

Session 3D: PANEL— Development Patterns and Ecosystem Functions—What Do We Know?

Room: Salon 3

Characterization of the problems that current development patterns create for ecosystems, communities and economies.

Marina Alberti, University of Washington, Urban Design and Planning, "A Review of the Effects of Landscape Patterns on Local Bio-metrics"

Chris Konrad, US Geological Survey, "Streamflow Metrics for Linking Landscape Changes to the Condition of Stream Ecosystems in the Puget Sound Basin"

Brian Collins, University of Washington, Earth and Space Sciences, "The Implications of Landscape Change on the Function of River Basin-scale Processes"

Gillian Mittlestaedt, Sustainable Community Solutions, "The Fiscal Side of Protecting Fish: Can Compact Development Protect Your Community's Basins and Budgets?"

Session 3E: Contaminant Effects on Fish

Room: Oak

10:30am Mechanisms of Polycyclic Aromatic Hydrocarbon Toxicity in Early Life History Stages of Fish
John P. Incardona, Tracy K. Collier and Nathaniel L. Scholz

10:45am Do PCBs or PAHs Affect the Innate or Acquired Disease Resistance of Chinook Salmon to *Listonella anguillarum*?

David B. Powell, Roger C. Palm, Jr., Ann Skillman and Kathy Godtfredsen

11:00am Is PAH Exposure of Adult Coho Salmon Related to Abnormal Pre-spawn Mortality?

Gina M. Ylitalo, Jon Buzitis, Margaret M. Krahn, Nathaniel Scholz and Tracy K. Collier

11:15am Further Survey Results on Xenoestrogen Exposure of Benthic Fish in Puget Sound

Daniel P. Lomax, Lyndal L. Johnson, James E. West, Sandra M. O'Neill and Tracy K. Collier

11:30am The Exposure-Dose-Response Triad in the Georgia Basin: Synoptic Measures of External Chemical Exposure, Internal Chemical Dose, and Associated Biological Responses
Michael H. Salazar and Sandra M. Salazar

11:45am Improving Estimates of Contaminant Exposure for Mobile Organisms: An Assessment of Area-weighted Home Range Exposure Estimates Applied to the Relationship Between Sediment Chemistry and Liver Lesions in English Sole

Jeffrey H. Stern, Dan P. Hennessy and Clay R. Patmont

Session 3F: Nearshore Habitat Inventories

Room: Cypress

10:30am Rapid Shoreline Inventory—Inventorying Shoreline Resources and Interpreting Shoreline Health
Jacques White, Phil Bloch and Tom Dean

10:45am Bainbridge Island Nearshore Structure Inventory
Peter Namtvedt Best

11:00am Bainbridge Island Nearshore Characterization and Assessment

Amy B. Borde, Gregory D. Williams*, Peter Namtvedt Best, Ronald M. Thom and Nathan R. Evans

11:15am The Sensitive Ecosystems Inventory of East Vancouver Island and Gulf Islands—Latest Evaluations of Status
P. Marlene Caskey and Judith Cullington

11:30am A Habitat Assessment Approach for Identifying Priority Nearshore Estuarine Conservation and Restoration Areas

Paul Schlenger, John Small, Peter Hummel, Elizabeth Appy* and Tom Schadt

11:45am Changes to the Shoreline of Fidalgo Bay and Eastern Guemes Channel Since 1891: The Value of a GIS Approach

S. Wyllie-Echeverria, A. Bailey and B. Williams

* Presenting Author

12:10-1:20pm

Lunch

Bayshore Grand Ballroom

Keynote:

Stephen Hume, Author, Lecturer & Vancouver Sun Columnist, "*The Stewardship of Eden*"

1:30-3:00pm

CONCURRENT SESSIONS 4

Session 4A: PANEL— Connecting Science, Policy and Decisions in Indicator Development and Reporting

Room: Salon 1

Discussion of indicator development, policy, social marketing as well as issues raised in Session 3A. An open discussion will take place after brief opening statements.

Risa Smith, Environment Canada

Chris Parsons, Washington State Department of Community, Trade and Economic Development

Archie Riddell, British Columbia Ministry of Sustainable Resource Management

Nola Kate Seymoar, International Centre for Sustainable Cities

Lee Hatcher, AtKisson, Inc.

Noreen King, Belo Marketing Solutions

Session 4B: Transboundary Air Quality (I)

Room: Seymour

1:30pm Georgia Basin/Puget Sound International Airshed Strategy (IAS)

Martin Mullan and Nancy Helm

1:45pm Characterization of the Georgia Basin/Puget Sound Airshed

Bruce Thomson

2:00pm An Economic Analysis of Air Pollution Policies in the Georgia Basin-Puget Sound Transboundary Region

Carmen Hranac

2:15pm Long-term Rain Chemistry Monitoring on Vancouver Island
Warren McCormick

2:30pm Georgia Basin/Puget Sound Air Quality Modelling
Colin di Cenzo

Session 4C: Demersal and Pelagic Fish—Status and Distribution

Room: Salon 2

1:30pm A Comparison of the Populations of Pelagic Fishes in Puget Sound and the Strait of Georgia

R.J. Beamish, R. Sweeting*, C. M. Neville and G. A. McFarlane

1:45pm Fish Without Borders: Trends in the Status and Distribution of Groundfish in the Transboundary Waters of Washington and British Columbia

Wayne A. Palsson, James Beam, Sue Hoffmann and Paul Clarke

2:00pm Potential Impacts of Infectious Diseases to Populations of Pacific Herring in Puget Sound
P.K. Hershberger, R.M. Kocan, N.E. Elder and J.R. Winton

2:15pm Status Report Census of Lingcod Nesting Activity in the Edmonds Underwater Park
Kirby W. Johnson

2:30pm Individual Identification and Population Parameter Estimates within Puget Sound and Georgia Basin Six-gill Sharks (*Hexanchus griseus*)
Shawn Larson and Jeff Christiansen

2:45pm Possible Differences in Copper Rockfish Reproduction at Maternal Length and Age
Dan Cooper

*Presenting Author

Session 4D: Ecosystem-based Policy and Planning
Room: Salon 3

1:30pm Creating an Integrated Vision for Transboundary Sustainability Using a Georgia Basin—Puget Sound Simulation Tool
Dave Biggs and Roger Anderson

1:45pm Regional Conservation Planning Data Needs
Philip Bloch, Jeff Ardron, Zach Ferdaña and Peter Etnoyer

2:00pm Biodiversity Conservation Strategy for the Greater Vancouver Region
Susan Haid, Pamela Zevit and Ken Brock

2:15pm The Northwest Straits Initiative and Conservation in Puget Sound: A Bioregionalist Analysis
Sean Harrington

2:30pm Ecosystem-based Management as Part of a Marine Environmental Quality (MEQ) Approach in the Central Coast, British Columbia, Canada
Glen Jamieson, Brenda Bauer and Herb Vandermeulen

2:45pm Is Environmental Security a Useful Framework to Address Environmental and Sustainability Issues in Puget Sound and Georgia Basin?
Ann Lesperance, Kathleen Judd, Nancy Peterson and Barbara Reichmuth

Session 4E: PCBs in Georgia Basin/Puget Sound Ecosystems
Room: Oak

1:30pm Overview of Results from a Workshop Addressing PCBs in Puget Sound and Georgia Basin Ecosystems
P. Bruce Duncan, Tracy Collier, Karen Kinnee and April Markiewicz

1:45pm Modeling PCBs: Lessons Learned from Large Systems
Frank Gobas

2:00pm Workshop on PCBs in Puget Sound and Georgia Basin Ecosystems: Recommendations from the Abiotic Fate Workgroup
Staci L. Simonich

2:15pm A Model for Transfer of PCBs Among Plants, Invertebrates, and Lower Vertebrates of the Puget Sound/Georgia Basin Ecosystem
James E. West and Sandra M. O'Neill

2:30pm PCB Accumulation in Marine and Anadromous Fishes of the Puget Sound and Strait of Georgia
Sandra M. O'Neill and James West

2:45pm Life at the Top of the Food Chain: Seabirds, Seals and Whales as Sentinels of Environmental Contamination in Puget Sound and Georgia Basin
Peter S. Ross

Session 4F: Harmful Algal Blooms
Room: Cypress

1:30pm Increased Magnitude, Frequency and Geographical Spread of Harmful Algal Blooms in Puget Sound
Vera L. Trainer, Bich-Thuy L. Eberhart, John C. Wekell, Nicolaus G. Adams, Linda Hanson, Frank Cox and Judy Dowell

1:45pm Effects of a Common Marine Algal Toxin on Early Development and Behavioral Performance in Fish
Kathi A. Lefebvre, Vera L. Trainer and Nathaniel L. Scholz

2:00pm Managing Important Recreational and Commercial Shellfish Fisheries Around Harmful Algal Blooms
Dan L. Ayres and Heather J. Reed

2:15pm Paralytic Shellfish Poisoning: The Relationship Between *Alexandrium* Abundance and PSP Toxins on Kodiak Island, AK
Julie A. Matweyou, Dean A. Stockwell, Christopher A. Scholin, Sherwood Hall, Vera L. Trainer, Jason D. Ray, Terry E. Whittedge, Amy R. Childers and F. Gerald Plumley

2:30pm Seasonal and Interannual Variation in Blooms of *Alexandrium* spp. in the Strait of Georgia, Evaluated from Time Series of PSP Toxicity in the Sentinel Species *Mytilus californianus*
J.N.C. (Ian) Whyte, Norma Ginther, Laurie Keddy and Nicky Haigh

3:00-3:30pm	Beverage Break Level 2 Prefunction Area
3:30-5:00pm	CONCURRENT SESSIONS 5

Workshop 5A: Developing Common Indicators for a Transboundary Indicator Report
Room: Salon 1

This session will focus on the practical issues and technical steps involved in identifying and developing common transboundary indicators. Five topic areas are examined for possible inclusion in the next Georgia Basin-Puget Sound binational indicators report:

- water quality (fresh and marine)
- water consumption/use
- shellfish contamination
- land use/development

Session 5B: Transboundary Air Quality (II)
Room: Seymour

3:30pm Visibility Targets for the Lower Fraser Valley, British Columbia
Roger McNeill and Anne Roberge

3:45pm Atmospheric Concentrations of Semi-Volatile Organic Pollutants on the Tip of the Olympic Peninsula of Washington: Evidence of Trans-Pacific Transport?
Staci L. Simonich and Robert Killin

4:00pm Biomonitoring Atmospheric Deposition in the Georgia Basin, British Columbia
Beverley Raymond

4:15pm Air Contaminant and Greenhouse Gas Emission Trends and Forecast for the International Lower Fraser Valley Airshed
John Newhook, Kelly Der and Derek Jennejohn

4:30pm Forecasting Ground Level Ozone in the Lower Fraser Valley
Edward Lord and Alex Cannon

Session 5C: Salmon Habitat and Population Studies

Room: Salon 2

3:30pm Juvenile Salmon Utilization of Sinclair Inlet, an Urban Embayment

Kurt L. Fresh, Doris Small, Hwa Kim, Mike Mizell, Chris Waldbillig and Mark I. Carr

3:45pm Juvenile Salmonid Utilization Patterns in the Snohomish River Estuary

Mindy Rowse and Kurt Fresh

4:00pm Linking Habitat-related and Density-dependent Population Responses in Chinook Salmon

Correigh Greene, Tim Beechie and Mary Ruckelshaus

4:15pm Early Upstream Migration and Mortality of Late-run Fraser Sockeye Stocks

Michael F. Lapointe

4:30pm Distribution and Abundance of Hatchery and Wild Juvenile Chinook Salmon in Nearshore Waters of Skagit Bay, Puget Sound, WA

Casey Rice, Eric Beamer, Dan Lomax, Rich Henderson and George Pess

4:45pm Chemical Habitat Quality: A Major Source of Uncertainty in Salmon Recovery Planning

Nathaniel L. Scholz and Tracy K. Collier

Session 5D: Information and Decision Support Tools for Landscape Analysis

Room: Salon 3

3:30pm Washington State Digital Coastal Atlas

Cinde Donoghue

3:45pm Landscape Tools for Protecting and Restoring Aquatic Ecosystems

Stephen Stanley and Susan Grigsby

4:00pm Using the Relative Risk Model for a Regional Scale Ecological Risk Assessment and Risk Prediction to Management Options of the Squalicum Creek Watershed, WA, USA

Joy C. Chen and Wayne G. Landis

4:15pm Wildlife Inventories in the Boundary Bay Watershed

Anne Murray

4:30pm GBEI Coast Salish/Sto:lo Nation Environmental Inventory

Francine Roulston

4:45pm British Columbia's Decision Support Tool for Hydrologic and Fisheries Applications

Mark Sondheim and Pete Lewis

Workshop 5E: Developing a Research Proposal Addressing PCBs in Georgia Basin/Puget Sound

Room: Oak

This session will build on perspectives that emerged from a recent workshop on PCBs in the region. The presenters were involved as workgroup chairs in that workshop and are now developing a research program.

Workshop 5F: Canada's National Programme of Action (NPA): Managing Shared Waters

Room: Cypress

This session will present Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities, a collaborative federal-provincial-territorial governance approach to achieving integrated water management. It will also include a discussion, involving Canadians with an interest in managing shared waters, reflecting on how the NPA can be operationalized on the west coast.

5:00-6:00pm

Poster Viewing

Bayshore Grand Ballroom

WEDNESDAY, APRIL 2, 2003

7:30-8:30am

Conference Check-In, Continental Breakfast & Poster Viewing

Bayshore Grand Ballroom & Lobby

8:30-9:30am

General Session

Bayshore Grand Ballroom

Presenter:

The Honorable David Anderson, Minister of the Environment, Canada

9:30-10:30am

Beverage Break & Poster Viewing

Bayshore Grand Ballroom & Lobby

10:30am-12:00pm

CONCURRENT SESSIONS 6

Session 6A: Habitat Restoration Projects

Room: Salon 1

10:30am Rehabilitating River Valley Ecosystems: Examples of Public, Private, and First Nation Cooperation in Western Washington

Tim Abbe, Michael McHenry, Keith Dublanica, Andy Ritchie, Maeve McBride and Mark Ewbank

10:45am Galiano Forest Restoration Project

Keith Erickson

11:00am A Tidal Habitat Restoration Success Story—The Union Slough Restoration Project

Jonathan P. Houghton and Leslie Uhlig

11:15am South Buttle Lake (Reservoir) Shoreline Revegetation

Scot MacKillop and William Dushenko

11:30am Habitat Restoration in the Georgia-Pacific Log Pond, Bellingham

Clay R. Patmont, Brian L. Bingham, R. Chip Hilarides and Paul T. Schlenger

11:45am Parks Canada Participation in Garry Oak Ecosystems Recovery

Brian Reader

Session 6B: PANEL—Science/Decision-making Interface

Room: Salon 2

This session will explore the use of science-based information by the Greater Vancouver Regional District in British Columbia; by local governments in Washington State; and in the energy sector, by BC Hydro.

Ken Cameron, Greater Vancouver Regional District, "A Risk Assessment Approach to Using Science for Decision-making"
Chris Parsons, Washington State Department of Community, Trade and Economic Development, "Assessing Scientific Information for Reliability and Local Application"

Bruce Sampson, Strategic Planning & Sustainability, BC Hydro, "Integrating Science-based Information in a Triple Bottom Line Approach"

Session 6C: Physical and Biological Oceanography (I)

Room: Salon 3

10:30am A Comparison of Predicted Cross-Channel Flows from an EFDC-based Model to ADCP Data in South Puget Sound

Skip Albertson, N. Larson and J. Newton

10:45am Patterns of Larval Settlement are not Predictable from Coarse Measures of Surface Circulation

Terrie Klingner and Janine Kido

11:00am Year-long Current Measurements in Puget Sound's Triple Junction

Bruce Nairn, Curtis Ebbesmeyer and Glenn Cannon

11:15am Undergraduate Oceanographic Research: A Longitudinal Transect of Puget Sound, May 2002 & Historical Comparison

Wynnae M. Osenga, Cynthia B. Tomkins and Cheryl L. Greengrove

11:30am Drift Cards from Puget Sound Found in Juan de Fuca Strait
Kari Sauers, Terrie Klinger, Carol Coomes and Curtis Ebbesmeyer

Session 6D: PANEL—Information and Decision Support Tools for Landscape Planning

Room: Seymour

Discussion that characterizes the role of emerging tools and methods in assisting land use planners in Georgia Basin and Puget Sound.

Regina Bestbier, University of British Columbia, "*Land Use Impacts in the Elk Creek Watershed in Chilliwack: A multimedia Public Information System*"

Paul Waddell, University of Washington, Urban Design and Planning, "*UrbanSim—A Tool for Land Use Planners*"

Anthony Gabriel, Central Washington University, Geography and Land Studies, and Leo Bodensteiner, Western Washington University/Huxley College, "*Sensitive Shoreline Assessment: A Multimedia Decision Support Tool*"

Jon Schweiss, US Environmental Protection Agency, "*Linking Data and Analytical Tools Through RAINS*"

Session 6E: Marine Sediment Contaminants

Room: Cypress

10:30am Contaminant Mass Balance for Sinclair and Dyes Inlets, Puget Sound, WA

Eric Crecelius, Robert K. Johnston, Martin Miller, Jill Brandenberger, Jim Leather and Joel Guerrero

10:45am Revision of the Puget Sound Ambient Monitoring Program (PSAMP) Sediment Component Sampling Design

Margaret Dutch, Sandra Aasen, Valerie Partridge, Kathy Welch and Ed Long

11:00am Relationships Among Elements of the Sediment Quality Triad in Puget Sound

Edward R. Long, Margaret Dutch, Sandra Aasen, Kathy Welch and M. Jawed Hameedi

11:15am Sediment Quality at Ten Long-term Monitoring Stations in Puget Sound, 1989-2000

Valerie Partridge, Kathy Welch, Sandra Aasen and Margaret Dutch

11:30am Sediment Quality Assessment of the Iona Deep-Sea Outfall Area, 2000-2002

Albert van Roodselaar, Stanley Bertold*, Howard Bailey, Cathy McPherson and Michael Paine

*Presenting Author

Session 6F: British Columbia/Washington Environmental Cooperation Council Meeting (ECC)

Room: Oak

Meeting of a transboundary body that coordinates action and information on shared environmental issues. Formed in 1992 by the Premier of British Columbia and the Governor of Washington. This session begins at 9:30am.

12:00-1:15pm Lunch
Bayshore Grand Ballroom

Keynote:

The Honorable Joyce Murray, British Columbia Ministry of Water, Land and Air Protection

1:30-3:00pm CONCURRENT SESSIONS 7

Session 7A: Stewardship-Community Approaches (I)

Room: Salon 1

1:30pm Community Asset Mapping: Engaging Youth with their Environment

Jackie Amsden

1:45pm Possible Strategies for Enhancing Community Engagement in Stewardship and Restoration of Large Scale Transboundary Ecosystems

Henriette Bastrup-Birk

2:00pm The Shorekeeper's Guide for Monitoring Marine Intertidal Habitats

Glen S. Jamieson and Brian D. Smiley

2:15pm Sound Stewardship—Using Citizen-based Restoration Monitoring as Tool for Adaptive Management

Lisa Markovchick-Nicholls, Tom Dean, Phil Bloch and Jacques White*

2:30pm The Menzies Project—A Self-sustaining Citizen-based Monitoring Program

James G. Norris and Judy D'Amore

2:45pm Reefkeepers' Monitoring of Artificial Reefs: An Example of Local Citizen Science Involving Recreational Divers and Others on SE Vancouver Island

Brian Smiley and Brenda Burd

* Presenting Author

Session 7B: Transboundary Air Quality (III)

Room: Salon 2

1:30pm Atmospheric Deposition in the Georgia Basin
Wayne Belzer

1:45pm Puget Sound Air Toxics
Naydene Maykut

2:00pm Long Range Transport of Pollutants to the West Coast of North America
Peter Schwarzhoff

2:15pm The Tao of Energy: Balancing Energy and the Environment in the Puget Sound/Georgia Basin BioSystem
Michelle L. Newman

2:30pm Trend Analysis of Ground Level Ozone in the Greater Vancouver/Fraser Valley Area of British Columbia
Roxanne Vingarzan and Bill Taylor

Session 7C: Physical and Biological Oceanography (II)

Room: Salon 3

1:30pm Determination of Local Biological Versus Advective Physical Processes and their Resulting Effects on the Structure of Bio-Optical and Chemical Properties in Possession Sound Using a Network of Autonomous Seagliders

Julia K. Bos, Jan A. Newton and Charlie C. Eriksen

1:45pm In Situ and Remote Monitoring of Water Quality in South Puget Sound: The ORCA Time Series

Wendi Ruef, Allan Devol, Steven Emerson, John Dunne, Jan Newton, Rick Reynolds and Julia Lynton

2:00pm Circulation Variations in the Strait of Juan de Fuca
Glenn A. Cannon

2:15pm Pulsed Replenishment of Water Properties and Dissolved Oxygen in Hylebos Waterway, Tacoma, WA
Jeff Cox and Teri Floyd

2:30pm On the Origin of Harmful Algal Bloom Species in Pacific Coast Estuaries: Perspectives from ORHAB
Katherine M. Cox, Jan A. Newton and Julia Bos

2:45pm Observations and Simulation of Seasonal Variability within the Straits of Georgia and Juan de Fuca
Diane Masson and Patrick F. Cummins

Session 7D: PANEL—Modeling Alternative Futures for the Chico Watershed

Room: Seymour

Presentation of efforts by local watershed planning team to evaluate the effects of alternative population growth scenarios on physical watershed functions and conditions.

Paul Nelson, Kitsap County Planning, "*Assembling and Presenting Watershed Process Models for Evaluating Future Land Use Scenarios*"

Mindy Roberts, University of Washington, Watershed Science Center; "*Hydrologic and Riparian Processes Within the Chico Watershed*"

Catalina Segura-Sossa, University of Washington, Watershed Science Center, "*Evaluating the Reliability of Rapid Stream Channel Assessment Techniques*"

Mary Linders and George Wilhere, Washington State Department of Fish and Wildlife, "*Evaluating the Effects of Human Development Patterns on Terrestrial Habitat Function*"

Paul Nelson, Kitsap County Planning, "*Evaluating the Implications of Watershed Change on Stream Conditions and Salmon Habitat*"

Session 7E: On the Road to Orca Recovery—Challenges and Opportunities for International Cooperation

Room: Cypress

Both government and non-government organizations need to act now if the decline in orca population is to be addressed and stopped. As the orca's key habitat extends across national boundaries so must the response. As precedents with other species have established transboundary management, so should the orca recovery strategy. Panelists will describe challenges, opportunities and priorities for developing a successful recovery partnership.

Marilyn Joyce, Fisheries and Oceans Canada
Fred Felleman, Orca Conservancy
Brent Norberg, National Marine Fisheries Service, Northwest Region
Peter Ross, Institute of Ocean Sciences
Susan Berta, Orca Network
Marc Pakenham, Veins of Life Watershed Society

Session 7F: British Columbia/Washington Environmental Cooperation Council Meeting (continues until 5:00pm)

Room: Oak

3:00pm	Conclusion of Daily Concurrent Sessions
3:15 - 5:00pm	Informal Workshops

Harmful Algal Blooms

Room: Cypress

This workshop will focus on identifying the priorities for Harmful Algal Blooms (HAB) monitoring in the Georgia Basin/Puget Sound area, as well as to identify what resources are currently available to leverage. The intent is to begin to identify a unified plan on how to progress on a more comprehensive HAB monitoring plan for the region.

Advancing Landscape Assessment and Planning: Summary and Roundtable Discussion

Room: Seymour

This workshop will focus on the refinement, integration and accessibility of existing and emerging tools and methods that are scientifically sound, relevant to current policy development and credible to local communities. It will follow up on outstanding issues from sessions 3D, 5D, 6D and 7D.

THURSDAY, APRIL 3, 2003

7:30-8:30am	Conference Check-In, Continental Breakfast & Poster Viewing <i>Bayshore Grand Ballroom & Lobby</i>
8:30am-10:00am	CONCURRENT SESSIONS 8

Session 8A: Marine Conservation

Room: Salon 1

8:30am Species of Concern in the Georgia Basin/Puget Sound Marine Ecosystem: More Support for a Transboundary Ecosystem Approach to Marine Conservation

Joseph K. Gaydos and Kirsten V.K. Gilardi

8:45am Ecoregional Conservation Planning in the Marine Environment

Mary Lou Mills and Brian MacDonald

9:00am Toward a National Marine Conservation Area in the Southern Strait of Georgia

William D. Henwood

9:15am Achieving a System of Marine Protected Areas in the Northwest Straits Region of Washington State: A Nearshore Perspective

Kate Smukler

Session 8B: Low Impact Development Approaches and Watershed Hydrology

Room: Cypress

8:30am Management Strategies for Urban Stream Rehabilitation in the Pacific Northwest

Derek B. Booth, James R. Karr, Sally Schauman, Christopher P. Konrad, Sarah A. Morley, Marit G. Larson and Stephen J. Burges

8:45am East Clayton Stormwater Infiltration Systems Design and Predicted Operation

J. Dumont

9:00am Accelerated Program to Identify County's Urgent Drainage Needs

Gregg Farris, Steve Swenson and John Rogers

9:15am WSU Pierce County Low Impact Development Pilot Project Monitoring

Curtis Hinman

9:30am In the Absence of Standards Low Impact Development Might Equate to High Impact Development

Thomas W. Holz

9:45am Stormwater Runoff Flow Control Benefits of Urban Drainage System Reconstruction According to Natural Principles

Richard R. Horner

Session 8C: Invasive Species

Room: Seymour

8:30am Ecological Monitoring of Introduced Species in Douglas Fir Forest Ecosystems on Southern Vancouver Island in the Georgia Basin

Jennifer Bailey and William T. Dushenko

8:45am Effects of Temperature and Salinity on Larval Growth Rates and Dispersal Potential of the Introduced Bivalve, the Varnish Clam (*Nuttallia obscurata*), in Coastal British Columbia

Sarah E. Dudas, John F. Dower and Theresa Peters

9:00am Linking Control Data with Basic Ecological Information to Improve the Removal Efficacy of the Invasive Cordgrass (*Spartina anglica*) in Puget Sound, WA
Sally D. Hacker, Tabitha G. Reeder and Megan N. Dethier

9:15am Pathways and Regulation of Aquatic Nuisance Species into British Columbia's Waterways
P.G. Lim

9:30am Interjurisdictional Responses to Aquatic Nuisance Species in the Pacific Northwest
Stephen Phillips and Mark Sytsma

Session 8D: Stewardship-Community Approaches (II)
Room: Oak

8:30am Carrot, not Sticks: Harnessing the Local Economy and Using Incentives to Protect Natural Areas in the Southern Gulf Islands
Linda Adams

8:45am Applications of Social Marketing in a Residential Watershed Pledge Program
Pamela M. M. Jull

9:00am Challenges for Private Woodlot Owners in Implementing Sustainable Eco-forestry Practices in Eastern Vancouver Island
Gary Schaan

9:15am Living Green: A Watershed Pledge Program Influencing Behavioural Change to Reduce Nonpoint Source Pollution
Arelia Werner

9:30am Success Through Stewardship: White Sturgeon Monitoring and Assessment in the Lower Fraser River, BC
Troy C. Nelson, Marvin L. Rosenau, and Rick Hansen

Session 8E: Exposure and Effects of Toxic Chemicals on Wildlife and Biota in Georgia Basin and Puget Sound
Room: Salon 2

8:30am Bioaccumulation of Pollutants in Octopuses (*Enteroctopus dofleini*)
Roland C. Anderson

8:45am Effects of Agricultural Effluent on Native Amphibians in the Lower Fraser River Valley
Christine Bishop, C. Kennedy, R. Loveridge and John E. Elliott

9:00am Altitudinal Migration within a Watershed Influences the Contaminant Profiles of American Dippers
Christy A. Morrissey, Leah I. Bendell-Young and John E. Elliott

9:15am Contaminants in Surf Scoters Wintering in the Strait of Georgia, British Columbia, Canada
Laurie K. Wilson and John E. Elliott

9:30am Assessing the Dietary Exposure of Harbour Seals (*Phoca vitulina*) to Persistent Organic Pollutants (POPs) in the Strait of Georgia, British Columbia and Puget Sound, Washington State
Donna L. Cullon, Steve Jeffries, Michael J. Whitarcar and Peter S. Ross

9:45am Chlorinated Hydrocarbons and Heavy Metals in River Otter (*Lutra canadensis*) and Mink (*Mustela vison*) Samples from the Coast of British Columbia
John E. Elliott and Laurie K. Wilson

Session 8F: Habitat Restoration and Conservation
Room: Salon 3

8:30am Wildlife Habitat Conservation Strategy
Caroline Astley

8:45am The Role of Mitigation in a Restoration Strategy
Will Hall

9:15am Modeling Ecosystem Integrity: Decision Tools for Prioritizing Stream Restoration
William Kleindl, Lucinda Tear, Chip Maney, Pete Lawson and Bill Lavoie

9:30am Monitoring Restoration of Off-channel Habitats for Pacific Salmon
Sarah Morley, Patricia Garcia, Todd Bennett and Phil Roni

9:45am Water Quality as a Contemporary Limiting Factor to Olympia Oyster Restoration in Washington State
J. Anne Shaffer

10:00-10:30am	Beverage Break Level 2 Prefunction Area
10:30-12:00pm	CONCURRENT SESSIONS 9

Session 9A: Designing Marine Reserves
Room: Salon 1

10:30am National Marine Conservation Areas: Proposals for a Federal Government Program Structure on the Pacific Coast of Canada
Wayne L. Bourque

10:45am Site Conservation Planning for Marine Biodiversity Richness Zones within the Orca Pass International Stewardship Area
Mike Sato, Philip Bloch, Peter Ronald, Jeff Ardron and Jacques White

11:00am Could the San Juan Island National Wildlife Refuge Serve to Protect Marine Areas? An Evaluation of Refuge Nearshore Buffer Zones Relative to their Function as Marine Protected Areas
Cristen Don

11:15am Acoustic Telemetry of Copper Rockfish (*Sebastes caurinus*) Home Range to Determine Minimum Marine Protected Area Size
Eric Eisenhardt

Session 9B: People and Processes—Collaborative Management (II)
Room: Cypress

10:30am The Tulalip Tribes Cultural Stories Project: Recording and Using Traditional Knowledge for Cultural Landscape Recovery, Watershed Management and Salmon Protection
Julia Gold, Preston Hardison and Terry Williams

10:45am Ecosystem Planning in the Georgia Basin, Puget Trough and Willamette Valley Ecoregion: A Transboundary Approach
Pierre Iachetti, Chuck Rumsey and Marcy Summers

11:00am Water Resource Management Practices in Northwest Russia and their Impact on the Baltic and Barents Seas
Nathaniel Trumbull

11:15am Western Washington Interagency Dredging Coordination Workgroup—an Interagency, Cross-jurisdictional Success Story
Philip L. Hoffman and George Hart

Session 9C: PANEL—Fish Habitat and Stewardship in British Columbia

Room: Seymour

Discussion of Canada's Stewardship Agenda, the end of the Habitat Conservation and Stewardship Program (HCSP) and challenges facing stewardship in British Columbia.

Ted Cooke, Fisheries and Oceans Canada
Lisa DeGoes, Fisheries and Oceans Canada
Carl Sam, Squamish River Watershed Society
Andrew Appleton, HCSP Stewards-Lower Fraser
Marc Pakenham, Veins of Life

Session 9D: PANEL—Assisted by Science, Empowered by Public Process: How Citizen Leadership Can Protect and Restore the Marine Environment

Room: Oak

Discussion by panel of Marine Resource Committee members and scientists working with the Northwest Straits Marine Conservation Initiative that will focus on findings and ongoing projects, as well as discuss the public process that is driving this place-based experiment in marine conservation.

Andrea Copping, University of Washington, "Northwest Straits Marine Conservation Initiative"
Gary Wood, Island County Marine Resources Committee, "Forage Fish Spawning in Island County"
Kirby Johnson, Snohomish County Marine Resources Committee (MRC), "Snohomish County MRC Dungeness Crab Stewardship Plan"
Tom Cowan, Northwest Straits Commission, "Hazards and Removal of Derelict Fishing Gear"
Rhea Miller, San Juan County Commissioner, "Citizen Involvement in the Protection of the Marine Environment"

Session 9E: Ecosystem Assessment and Management

Room: Salon 2

10:30am Ecosystem-based Management Should Include an Assessment of the Impacts of Pacific Salmon Enhancement and Escapements on Associated Salmon Species in the Strait of Georgia

R.J. Beamish, C. M. Neville and R. Sweeting

10:45am Back to the Future in the Strait of Georgia/Puget Sound

Nigel Haggan

11:00am Conceptual Models as a Tool for Assessing, Restoring, and Managing Puget Sound Habitats and Resources

Ronald M. Thom, Gregory D. Williams and Amy B. Borde

11:15am Defining Coastal Processes for Nearshore Habitat Protection in Puget Sound

Jim Johannessen

11:30am Monitoring of the Lower Fraser River Using Fish Assemblages: Can It Be Done Without Reference Conditions?

John S. Richardson and Scott G. Hinch

11:45am Stream Assessments in the Georgia Basin Using the Reference Condition Approach for Benthic Invertebrate Monitoring

S. Sylvestre, T. Tuominen and T. Reynoldson

Session 9F: Nearshore and Subtidal Biota

Room: Salon 3

10:30am Coastal Biota Survey of the Tidelands of the Swinomish Tribal Community

Todd Mitchell and Rachel LovellFord

10:45am Fish Species Composition, Timing and Distribution in Nearshore Marine Waters: A Synopsis of 2001-2002 Beach Seining Surveys in King County, WA

Jim Brennan and Kollin Higgins

11:00am A Geoduck Distribution and Abundance Survey in the Central Basin of Puget Sound

Kimberle Stark

11:15am Managing Washington State Seagrass Resources—New Directions for a New Millennium

Elsa L. Carlisle, Terrie Klinger and Sandy Wyllie-Echeverria

11:30am Physiographic Controls on the Distribution of Eelgrass (*Zostera marina*) in Hood Canal

Ralph Haugerud, David Finlayson, Harvey Greenberg, Miles Logsdon, Charles Simenstad and Ralph Garono

11:45am Soundwide Eelgrass Monitoring in Puget Sound: 2000-2001 Results

Amy Sewell

12:15-1:45pm Lunch

Bayshore Grand Ballroom

2:00-3:30pm CONCURRENT SESSIONS 10

Session 10A: Evaluation and Assessment of Marine Reserves

Room: Salon 1

2:00pm Time Will Tell: Long-term Observations of the Response of Rocky-Habitat Fishes to Marine Reserves in Puget Sound

Wayne A. Palsson, Robert E. Pacunski and Tony R. Parra

2:15pm A Marine Protected Area Monitoring Technique for Nearshore Rocky Reef Fish: An Example from San Juan County's Bottomfish Recovery Program

Eric Eisenhardt

2:30pm Using Multibeam Bathymetry to Characterize Rockfish Habitat in San Juan County, Washington Marine Reserves, USA

H. Gary Green, Janet Tilden and W. A. Palsson

2:45pm Using Surface Current Models to Predict Particle Movement in the Eastern Basin of Puget Sound: Implications for Marine Protected Area Design

Kim Engie and Nicole Milne

3:00pm Designing, Implementing, and Monitoring Marine Reserves: An Example from the Florida Keys National Marine Sanctuary

Brian D. Keller

Session 10B: People and Processes—Collaborative Management (III)

Room: Cypress

2:00pm The Legal and Institutional Context of Incorporating Indigenous Knowledge into Fisheries Management

Preston Hardison and Terry Williams

2:15pm The Role of the Snohomish County Marine Resources Advisory Committee (MRC) in the Northwest Straits Initiative

Kirby W. Johnson

2:30pm Public Process and the Creation of the Race Rocks Marine Protected Area

Sean LeRoy, Tony Dorsey, James Tansey and Rod Dobell

2:45pm Evaluation of the Mullen Slough Sub-basin Watershed Management Process, King County, WA

Fiona McNair

3:00pm Agency Coordination: The Fraser River Estuary Management Program, 1985-2003
Joe Stott and Anna Mathewson

Workshop 10C: Development of a Canadian Biodiversity Index
Room: Seymour

The Federal/Provincial/Territorial Biodiversity Working Group, whose mandate is to implement the Canadian Biodiversity Strategy, has embarked on a multi-year journey to develop an index that captures the complexity of biodiversity and yet provides a cohesive easy-to-understand message to decision-makers. This workshop introduces you to the results of the first year's work towards development of a Canadian Biodiversity Index. We will be seeking:

- Your critique of the second draft of the framework.
- Your ideas and collaboration on future directions for this project.
- Your participation in the next phase, proof-of-concept testing.

Risa Smith, Environment Canada
Malcolm Gray, BC Ministry of Sustainable Resource Management
Greg Jones, BC Ministry of Water, Land and Air Protection

Session 10D: Pacific Estuarine Research Society Presentations
Room: Oak

2:00pm Baseline Monitoring: Planning, Design, and Prediction for Estuarine Habitat Restoration
W. Gregory Hood, Steve Hinton and John Klochak

2:15pm The Impact of Shoreline Armoring on Upper Beach Fauna of Central Puget Sound
Kathryn L. Sobocinski, Jeffery R. Cordell and Jim Brennan

2:30pm Invertebrates Transported to the Strait of Georgia and Juan de Fuca Strait by Ballast Water: Where Do They Come from and Where Do They Go?
Colin Levings, Jeff Cordell, Max Larson, Mike Foreman, Stacey Ong, Beth Piercey and Mike Tarbotton

2:45pm Coastal Cutthroat Trout (*Oncorhynchus clarki clarki*) Diet in South Puget Sound, WA, 1999 - 2002
Joseph M. Jauquet

3:00pm STRATOGE—The Strait of Georgia Ecosystem Project
R. Pawlowicz, S. Allen, J. Dower, R. Lee, S. Harris, M. Halvorsen, O. Riche and T. Bird

3:15pm Quantifying the Impacts of Tide Restrictions in Salt Marshes of Northern Puget Sound
Danelle Heatwole and Charles A. Simenstad

Workshop 10E: Understanding Trends in Marine Bird Abundance
Room: Salon 2

This session will discuss the nature of observed declines in marine birds, current understanding of the factors causing the decline, and research needed to better understand these factors.

Session 10F: Human Impact on the Nearshore Environment
Room: Salon 3

2:00pm Weight of Evidence and Path Analysis Applied to the Identification of Causes of the Cherry Point Pacific Herring Decline
Wayne G. Landis, Emily Hart Hayes and April M. Markiewicz

2:15pm Effects of Shoreline Modification on Spawning Habitat of Surf Smelt (*Hypomesus Pretiosus*) in Puget Sound, Washington
Casey Rice

2:30pm Monitoring Puget Sound Forage Fish and Habitat—Lessons from the Redondo Seawall Reconstruction Mitigation and Monitoring Project
James A. Shannon and William J. Taylor

2:45pm Assessing Overwater Structure-related Predation on Juvenile Salmon: A Field Study and Protocol for Weighing the Evidence
Gregory D. Williams, Ronald M. Thom, John Southard, Susan Sargeant, David K. Shreffler, Russ Moursund and Mark Stamey

3:00pm Applying Seattle's Blueprint to Assess and Benefit Chinook Salmon Using the Urbanized Shoreline
Gail Arnold Coburn and Judith Noble

3:15pm Impacts From Human Trampling on Rocky Intertidal Areas in Washington State, USA
Aleta Erickson, Terrie Klinger and Steven C. Fradkin

3:30-4:30pm Closing General Session
Bayshore Grand Ballroom

Challenges & Future Directions
Erik Karlsen, Planning Consultant & Former Management Committee Member of the Georgia Basin Ecosystem Initiative
Joseph K. Gaydos, Marine Ecosystem Health Program, University of California, Davis
Student Awards Closing

POSTER SESSIONS

Located in the Bayshore Grand Ballroom.

Group 1: Species

1-1 Observations on Mating of the Giant Pacific Octopus
Roland C. Anderson, James A. Cosgrove, Gregory C. Jensen and Kevin O. Lewand

1-2 San Juan County Forage Fish Assessment Project: Science and Citizen Involvement
Stephanie Buffum

1-3 Status, Abundance, and Colony Distribution of Breeding Pigeon Guillemots Throughout the Inland Marine Waters of Washington State, as Captured by PSAMP Efforts 1999-2002

Joseph R. Evenson, David R. Nysewander, Mary Mahaffy, Bryan L. Murphie and Thomas A. Cyra and

1-4 Variation and the Timing and Distribution of Herring Spawn in the Strait of Georgia, British Columbia
D. E. Hay and P. B. McCarter

1-5 Mapping Groundfish Distributions in Port Townsend Bay: A Review of 30 Years Data
Barbara Nightingale

1-6 Trends Observed for Selected Marine Bird Species During 1993-2002 PSAMP/WDFW Winter Aerial Surveys in the Inner Marine Waters of Washington State

David R. Nysewander, Joseph R. Evenson, Bryan L. Murphie and Thomas A. Cyra

1-7 Stait of Georgia, British Columbia: Wintering Area for Harlequin Ducks that Breed throughout the Pacific Northwest
Cyndi M. Smith and Constance M. Smith

1-8 Surf Smelt (*Hypomesus pretiosus*) in Burrard Inlet, British Columbia: Evidence of Recreational Overharvesting?
T.W. Theriault and D.E. Hay

Group 2: Habitat

2-1 Backyard Benefits
Ashley Adams, Heather Anderson, Emily Augenstein, Ian Bell, Lisa Cooper, Justin Hellier and Mara Wrede

2-2 Ducks Need Farms but How Do Farms Survive with Ducks? A Case Study Integrating Agriculture and Wildlife Habitat in the Lower Mainland of British Columbia
Christine Bishop

2-3 A Wide Area Rapid Assessment Technique for Benthic Habitats
Michael A. Kyte

2-4 Status of Fish Habitat in East Coast Vancouver Island Watersheds (1995-2002)
R.A. Tony Litke and Scott Manning

2-5 Garry Oak Restoration Project
Carolyn MacDonald

2-6 Urban and Agricultural Encroachment onto Fraser Lowland Wetlands—1989 to 1999
Kathleen Moore, Katrina Roger and Peggy Ward

2-7 Puget Sound Nearshore Ecosystem Restoration Program: Program Overview, Puget Sound Conceptual Model and Guiding Principles

Thomas Mumford, Fred Goetz, Hugh Shipman, Randy Shuman, Jan Newton, Charles A. Simenstad, Jim Brennan, Kurt Fresh, Megan Dethier, Miles Logsdon, Curtis Tanner, Doug Myers and Guy Gelfenbaum

2-8 Evaluation of Methods to Increase Light under Large Overwater Structures

Susan L. Sargeant, Ronald M. Thom, Heida L. Diefenderfer, Amy B. Borde and John A. Southard

Group 3: Aquatic Nuisance Species

3-1 Establishment of a Long-term Monitoring Program in Padilla Bay to Determine the Effectiveness of Chemical Controls in Returning Mudflat Habitat to Native Condition After *Spartina alterniflora* Removal

Donna Ball and John Rybczyk

3-2 Recruiting Recreational Divers to Monitor Aquatic Nuisance Species (ANS) in Puget Sound

W. Lauren Mark and Andrea E. Copping

Group 4: Toxics – Biota and Sediments

4-1 Sublethal Impacts of Copper on Olfaction and Olfactory-mediated Behaviors in Juvenile Coho Salmon (*Oncorhynchus kisutch*)

David H. Baldwin, Jason F. Sandahl, Jana S. Labenia and Nathaniel L. Scholz

4-2 Effects of Nonylphenol on Tail Resorption and Metamorphic Staging in *Rana catesbeiana* Tadpoles

Jennie Christensen, John Richardson, Christine Bishop, John Elliott and Bruce Pauli

4-3 Trace Metals Concentrations in Storm Water Runoff from Major Bridges in the Seattle Area

Frank Colich

4-4 Sublethal Effects of the Carbamate Insecticide, Carbaryl, on Coastal Cutthroat Trout

Jay Davis, Jana S. Labenia, David H. Baldwin, Barbara French and Nathaniel L. Scholz

4-5 Exposure of Nonylphenol Ethoxylates and Other Contaminants in Tree Swallows (*Tachycineta bicolor*) Breeding Near a Wastewater Treatment Plant

Patti Dods

4-6 PCB Aroclor Concentrations in Puget Sound Sediments
Margaret Dutch, Sandra Aasen and Ed Long

4-7 PCB Congener Concentration in Puget Sound Sediments
Margaret Dutch, Sandra Aasen and Ed Long

4-8 Effects of Copper on Mechanosensory Structures in Developing Fish Embryos and Larvae

Tiffany Kao and Nathaniel Scholz

4-9 Potential Effects of PAH and Temperature on Cherry Point Herring

Michael H. Salazar and Sandra M. Salazar

4-10 A Mussel Watch Approach to Integrate Biomonitoring in the Georgia Basin

Michael H. Salazar and Sandra M. Salaza

4-11 Electrophysiological Measures of Pesticide Toxicity to the Salmon Olfactory System

Jason Sandahl, David H. Baldwin, Jeffrey Jenkins and Nathaniel L. Scholz

4-12 Rapid Phenotypic Screening in Zebrafish: A Model for Identifying Developmental Toxicity in Native Fish Species

Carla M. Stehr, Kathi A. Lefebvre, Tiffany Kao, John Incardona and Nathaniel L. Scholz

4-13 Organic and Heavy Metal Contaminants in Eggs of Caspian, Least and Forster's Terns from Western United States Colonies

Christopher W. Thompson, Mary Mahaffy, Terry Adelsbach, Arthur Holden and Jianwen She

Group 5: Nutrients, Pathogens and HABs

5-1 Evaluating Status and Trends in Fecal Pollution from Shellfish Growing Areas in Puget Sound and the Straits of Georgia and Juan de Fuca

Timothy A. Determan

5-2 Spatial and Temporal Patterns of Paralytic Shellfish Poisoning in Puget Sound and the Straits of Georgia and Juan de Fuca

Timothy A. Determan

5-3 The Effects of *Heterosigma akashiwo* Blooms on a Microzooplankton Community

Debbie Erenstone

5-4 Using Remotely-Sensed Sea Surface Temperature Data to Track Movement of the Juan de Fuca Eddy in Association with Pacific Northwest Coast Harmful Algal Blooms

Nathan R. Evans, Dana L. Woodruff and Vera L. Trainer

5-5 Nitrate Concentrations and Bacteriological Counts in Groundwaters from the Lower Fraser Valley, British Columbia—A Survey

Basil Hii, Stephanie Sylvestre and Mark Sekela

5-6 Washington's Beach Environmental Assessment, Communication and Health (BEACH) Program

Lynn Schneider and Jan A. Newton

5-7 Best Management Practices to Reduce the Risk of Surface Water Contamination from Manured Agricultural Fields in South Coastal British Columbia

Laurens J.P. van Vliet and George A. Derksen

Group 6: Oceanography

6-1 Basin-scale Seasonal and Interannual Transport Variability and Sensitivity from a Box Model of Puget Sound Circulation

Amanda Babson and Mitsuhiro Kawase

6-2 An Interdisciplinary Investigation of Puget Sound Beach Dynamics

David Finlayson, Charles "Si" Simenstad, Hugh Shipman and Guy Gelfenbaum

6-3 Oceanographic Data for the Pacific Northwest Coast from Washington to Northern California: Results from an Undergraduate Research Cruise

Noah L. Halvorsen, James E. Gawel and Cheryl L. Greengrove

6-4 Seeing the Sound: A System for Learning About Puget Sound Using Model Visualizations and *In-situ* Field Experiences

Christian P. Sarason and Frederick R. (Fritz) Stahr

6-5 VENUS: A Novel Seafloor Observing System for Straits of Georgia and Juan de Fuca

V. Tunnicliffe and R. Pawlowicz

Group 7: Models/Tools

7-1 PRISM Cruises: Developing a Database to Evaluate Interannual Variability in Puget Sound. Part 1: Temperature and Salinity 1998-2002

Jonathan Kellogg, Noel Gray, Mitsuhiro Kawase, Mark Warner and Jan Newton

7-2 PRISM Cruises: Developing a Database to Evaluate Interannual Variability in Puget Sound. Part 2: Dissolved Oxygen 1998-2002

Noel Gray, Jonathan Kellogg, Mitsuhiro Kawase, Mark Warner and Jan Newton

7-3 A Tool for Assessing Littoral Habitat Function for Salmon—The Tidal Habitat Model

Jonathan P. Houghton, J. Eric Hagen and Juliet C. Fabbri

7-4 Comparison of Remotely-sensed Images for Identification of Land Cover Types in the Greater Vancouver Regional District

Sarbjeet Mann and Kristina Rothley

7-5 Developing a Network of Sediment Erosion Tables to Determine the Stability of a Hydrologically Altered Pacific Northwest Estuary Given Sea-level Rise

Sacha Maxwell and John Rybczyk

7-6 The Abbotsford-Sumas Aquifer: Development of a Trans-Boundary Aquifer Flow Model

J. Scibek, A. Desphande, D.M. Allen, N. Schuurman and B. Hii

7-7 Sensitive Ecosystems Inventory of the Georgia Basin Lowlands

Peggy Ward

Group 8: Monitoring

8-1 Environmental Trends in British Columbia, 2002

Dr. Linda Gilkeson

8-2 Mass Marking of Juvenile Chinook Salmon with Florescent Dye: Resurrection of an Old Tool and Potential Applications for Studies in the Nearshore

Michael Mizell, Mark Carr, Chris Waldbillig, Hwa Kim, Doris Small and Kurt Fresh

8-3 Human Impact Monitoring and Revegetation Efforts along the Littoral Zone of Ross Lake, WA

Kelly M. O'Neil

8-4 High Rates of Pre-spawn Mortality in Coho Salmon (*Oncorhynchus kisutch*) from Urban Streams in the Puget Sound Basin.

Laura Reed, Katherine Lynch, Kit Paulsen, Pat Stevenson, Mark S. Myers, Gina Ylitalo and Nathaniel L. Scholz

8-5 Using Advanced Scientific Diving Technologies to Assess the Underwater Environment

John Southard, Greg Williams, Sue Sargeant, Heida Diefenderfer and Michael Blanton

8-6 Estimation of Macro-algal Cover on a Newly Colonized Rock Reef

Tina Wyllie-Echeverria, David O. Duggins and Sandy Wyllie-Echeverria

Group 9: Governance/Management

9-1 Local-level Implementation of Marine Resource Conservation and Protection Projects: An Analysis of the Northwest Straits Commission Progress Towards the Eight Benchmarks

Jenny Hernandez

9-2 The Effects of Marine Protected Areas on Larval Rockfish Ecology

Lucie J Weis

Cassandra Lynn Hiller

Tracey Parker and Roger McNeil

Valerie Partridge, Jan Newton and Kathy Welch

Jon Y. Wang, Ed Lord and Alex Cannon

This image shows a single page of white paper with horizontal blue lines, resembling notebook paper. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

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ACKNOWLEDGMENTS

The conference organizers would like to thank the sponsors for their support, which made this event possible. We would also like to thank the Advisory Committee members for giving their time to help develop the program and guide conference planning. Carmen Hranac, Alicia Marrs, Mary Knackstedt, Krista Bax and Nicole Sakwa played a central role in organizing student activities and registration scholarships.

Both Lisa Guss and Gigi Williams provided indispensable administrative support. Promotion and media relations were coordinated by Mary Getchell, Margaret Phelan, Anne-Marie Sleeman and Wendy Soobis.

Jill Williams designed this program, the conference website and other conference materials. Toni Droscher designed and edited the Abstract and Biography book. We are very grateful for the efforts of our conference planners Joanie Pop, Kelly Carson and Lynn Edwards in managing logistics, registration and many other organizational issues.

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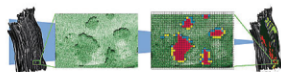
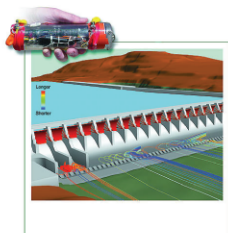
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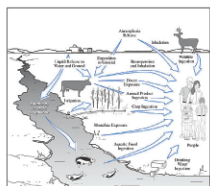
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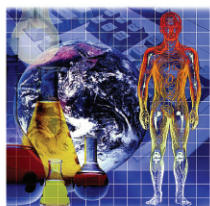
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For more information or to find out how you can support the MEHP, visit our Web site at <http://mehp.vetmed.ucdavis.edu> or contact Joe Gaydos (jkgaydos@ucdavis.edu, 360.376.3910) or Kirsten Gilardi (kvgilardi@ucdavis.edu, 530.752.4896).

2003 Georgia Basin-Puget Sound Research Conference

Dear Conference Delegates and Guests,

Welcome to the 2003 Georgia Basin-Puget Sound Research Conference. British Columbia is proud to welcome you and we have great hopes for this year's conference and the contribution it will make to diversity and sustainability in our shared ecosystem.

This conference offers a tremendous opportunity for scientists, researchers and observers to work together and forge new relationships with decision makers in both the public and private sector. The government of British Columbia recognizes that we all have a role to play in the drive towards environmental sustainability, and as such, we value these relationships and we encourage their development, both within this conference setting and within our ministries as well.

Our government has made a commitment to adopt a scientifically based, principled approach to environmental management that ensures sustainability, accountability and responsibility. We believe that by incorporating scientific knowledge into our decisions along with social and economic considerations, we ensure that today's decisions stand up to tomorrow's challenges.

The 2003 Georgia Basin-Puget Sound Research Conference will showcase the application of science to real world issues and we are pleased to be the venue for such valuable work.

Message from the Government of British Columbia



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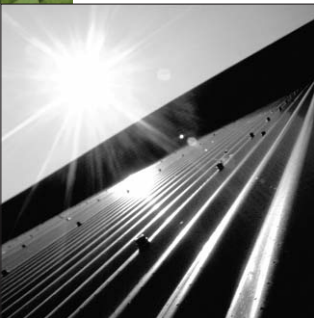
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